

BUMPER FOR REDUCING PEDESTRIAN INJURY

ABSTRACT

A vehicle bumper system includes a beam, and an energy absorber with top and bottom horizontal sections and a mid-horizontal section. The horizontal sections form top and bottom nose portions that are semi-rigid but initially collapsible with a parallelogram motion that shifts the top and bottom portions vertically up (or down) upon impact. Horizontal impact forces are converted in part to vertical forces during an initial stroke of a frontal impact, "catching" an impacted human being. Then during a further continuing impact stroke, the top and bottom horizontal sections provide a "throwing" action. End sections of the energy absorber extend around ends of a bumper beam, forming a collapsible corner that, during impact, initially absorbs energy at a low rate to "catch" a person, and then develops increasing lateral forces that "throw" the person during a continuing impact stroke.